Layers

Exploring Space: The Chris Hadfield Space Photographs Collection

A Story Map

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Welcome to the Chris Hadfield Space Photographs Collection

Launching the Chris Hadfield Space Photographs Collection
Tuesday, April 11, 3 pm, Killam Memorial Library, Room 2600

A Dalhousie newsletter about GIS & Data

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Launching the Chris Hadfield Space Photographs Collection

After his final mission, Colonel (Ret.) Chris Hadfield donated copies of his space photographs to Dalhousie University through the Dalhousie Libraries for us to share, preserve and promote their use in teaching and research. His photographs capture what Chris saw while orbiting Earth as a Canadian astronaut and Commander of the International Space Station (ISS). Inspired by Chris's photos, Dal Libraries' GIS Specialist and Map Curator James Boxall saw the potential in using the ESRI Story Map platform to organize the collection. The Story Map platform provides viewing and interacting capabilities designed to capture the imagination.

Caitlin Cunningham, a graduate student and student assistant in the GIS Centre, is the author of this Story Map. The image on the cover of the newsletter shows the homepage of the collection. Caitlin reviewed thousands of photos, selected hundreds for the project and then designed a series of related Story Maps to make them interesting and accessible. She also included complementary content from CSA, ESA and NASA.

The [Collection] activity is a grand tour of more than two hundred photographs captured by the ISS Commander. They have been georeferenced to their orbital path and placed on a map for anyone to see places of interest. Some are captivating nighttime images, because the ISS orbits the planet every 90 minutes and sees 16 sunsets and sunrises each day.

The [Changing Planet] activity puts two images on top of each other, so you can compare them by sliding left and right, while also zooming in and out. Currently, there are fifteen "swipe maps."

The swipe maps emphasize change over time at the same location, so they are useful for urbanization and climate change studies. The pair for Cyprus highlights wet and dry seasonal differences. The pair for Lake Ontario shows growth of an algal bloom from February to August.

The [Where?] activity presents 56 images without a label or map location. It gives any viewer a chance to do what we have done – figure out what part of the surface the image has captured. This activity is a spatial detective game and lets you submit your best guess. The right ones get placed on our full map.

The [Life in Space] activity provides an interactive tour of the space station by combining the Google Street View of the ISS with videos featuring former ISS Commander Hadfield doing everyday activities. Have you ever wondered how to brush your teeth without gravity?

After the launch of the collection on April 11, this digital collection will be open to the public through the Dal Libraries' website so anyone can enjoy viewing our planet from a million feet above the surface.

Caitlin Cunningham and James Boxall will offer a hands-on workshop for you to learn how to create your own ESRI Story Map at the upcoming Dal Libraries' Research Bootcamp (see *Events*).
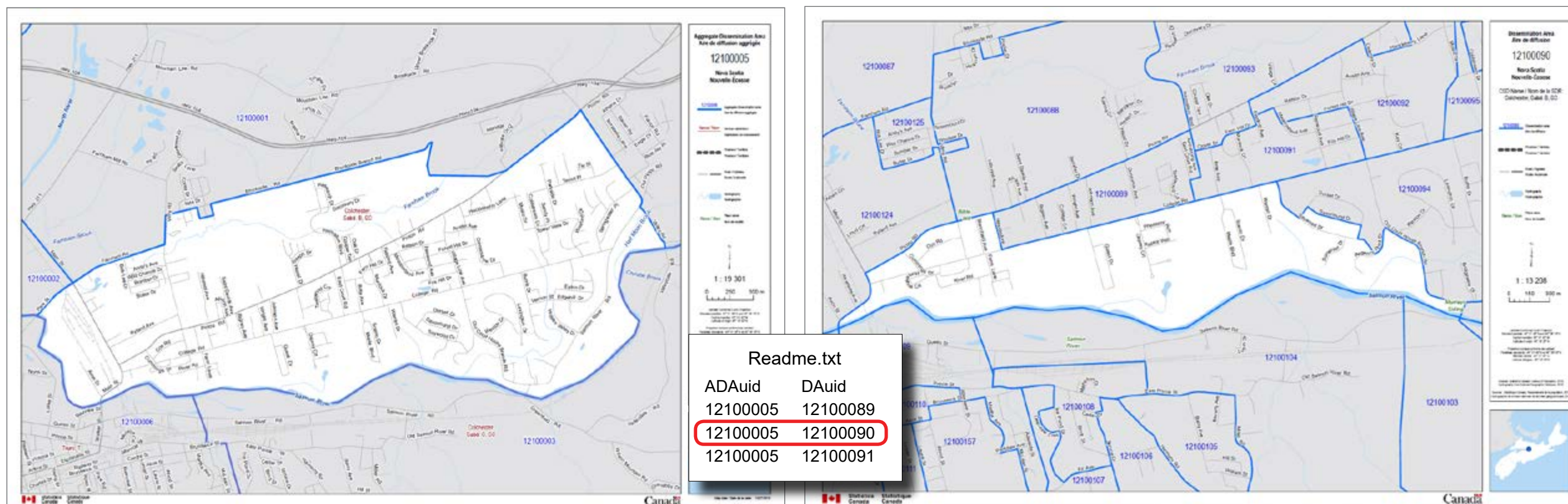
Join us!

Launch of the Chris Hadfield Space Photographs Collection

Thursday, April 11, 3 pm
Killam Memorial Library, Room 2600 (LINC)

2016 Census ADA and DA maps available for Nova Scotia (with CT maps for Halifax County)

ADA Map 12100005

DA Map 12100090

Readme.txt

ADAuid	DAuid
12100005	12100089
12100005	12100090
12100005	12100091

If you were looking for the DA map that corresponds to Dalhousie's Agricultural Campus, you would go to the Dal Dataverse and start with the Colchester County dataset, select the ADA for Bible Hill (12100005) and consult the readme file for the corresponding DAuid codes (within that ADA) before matching it with the correct DA map (12100090).

When working with Census geography, everywhere is somewhere. For Nova Scotia, the 2016 Census reference maps at the Aggregate Dissemination Area (ADA) and Dissemination Area (DA) geographic levels are now publicly available through the Dalhousie University Dataverse https://dataverse.library.dal.ca.

The reference maps are PDF files from Statistics Canada that define ADA and DA boundaries for all eighteen counties in Nova Scotia. DAs (formerly Enumeration Areas), have been used since the 2001 Census but ADAs are new. They were created for the 2016 Census, to encompass areas having a population ideally between 5,000 and 15,000, and cover an entire county (respecting its boundary).

The number of ADAs reflect the overall population of each county. Halifax County has 57 ADAs whereas Guysborough County has only one. Each county is a Dataverse dataset with its own Readme file, providing the coding correspondence between each ADAuid and DAuid. These identifiers are defined in the Readme file. In addition, there are CT maps that define Census Tracts for the Halifax Census Metropolitan Area (CMA=205). Overall, this collection contains more than a thousand maps in PDF format. You can download any of the files.

Note: The DA reference maps are not available on the StatCan website but the Statistics Canada Open Licence enables us to distribute this collection of maps on an "as is" basis.

Questions? Contact:

Julie Marcoux, Data Librarian
Sai Chua, Statistical Computing & Data Support

Tips from Jen Strang for the GIS Community

Sexton GIS Service

In the winter term, we introduced a GIS support service at the reference desk in the Sexton Library, Wednesdays from 1–4 pm (until April 3). Jen is there to answer planning or engineering questions.

TLS Patch for Desktop ArcGIS (ArcMap)

Transport Layer Security (TLS) is a network security protocol that provides privacy and data integrity between communicating applications over a network. You currently use TLS when accessing ArcGIS Online services such as basemaps and geoprocessing. This TLS patch makes the protocol more secure and MUST be installed by April 16, 2019, to ensure that ArcGIS Desktop (ArcMap) version 10.5 works correctly.

We'll upgrade the software on all computers in the Dal Libraries, computer labs, and Learning Commons areas, **but if you've installed ArcMap on your own computer, you need to download and install this TLS patch yourself, using the Dalhousie Libraries Software Download page:** https://software.library.dal.ca. More information about this patch is available here: https://support.esri.com/en/tls

ArcGIS Pro

ArcGIS Pro is being tested on campus on computers in the GIS Centre and in the Elizabeth May Lab (LSC, Biology Earth Sciences Wing, Room 2012). It was briefly introduced to students enrolled in ERTH3500, ERTH4520 and ERTH4530.

To introduce this new software to a wider audience, the Fall 2019 Lunchless Learn GIS Workshops will use ArcGIS Pro. If you want to start using it now, contact the GIS Centre. ESRI, the people who make ArcMap and ArcGIS, are upgrading and supporting both software applications. Ultimately, ArcGIS Pro will be the software replacement for ArcMap (anticipated timeframe 3–5 years).

Learn GIS this Spring!

Geoscience Information Management (ERTH/GEOG/ENVS3500 & ERTH5600) will be offered this May in a condensed format. Learn the basics of GIS (Systems and Sciences), enabling you to take more advanced GIS classes. For information about the course check the academic calendar or contact Dr. Chris Greene.

Esri Regional User Conference

The conference was held in Fredericton, New Brunswick, October 23 and 24. It was a great opportunity to meet with colleagues, learn new GIS tools and hear about future directions. David Foster, who is currently at Dalhousie working on his PhD, gave a presentation called "Managing Halifax's Newly Planted Urban Forest with Spatial Data." The conference proceedings are online at: https://esri.ca/en/events/user-conferences/esri-canada-user-conference-fredericton-2018

Datasets to Explore

Soil Data – Soil Landscapes of Canada
http://sis.agr.gc.ca/cansis/nsdb/slc/v3.2/index.html
Version 3.2 has been released from Agriculture and Agri-Food Canada. It provides information about the country's soils. It has geospatial data and a number of data tables to be joined or related to the geospatial data. The Data Model indicating how the data should be connected is provided.

Digital Elevation Model for the Canadian Arctic - High Resolution Digital Elevation Model (CanElevation Series)
https://open.canada.ca/data/en/dataset/957782bf-847c-4644-a757-e383c0057995
This data series is part of the Open Data Initiative for the Federal Canadian Government and is part of the Natural Resources Canada National Elevation Data Strategy. It includes Digital Terrain Models (DTM), Digital Surface Models (DSM), and other derived datasets.
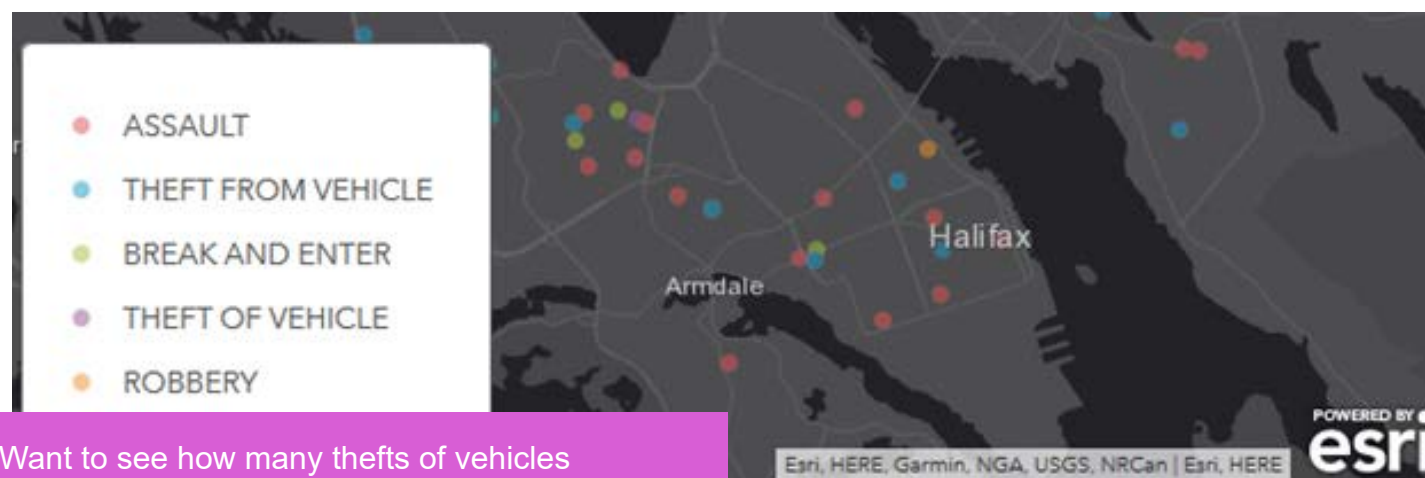

GIS Analyst Jen Strang
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Tips from Julie Marcoux for the Data Community

Crime in Halifax

The Halifax Open Data crime dataset looks at the number and type of crimes that have been committed within the last 7 days by general location (listed by the middle segment of the street nearest the location of the crime).

You may to want to check these data portals:
- The Halifax Open Data Portal: http://catalogue-hrm.opendata.arcgis.com/
- The Nova Scotia Open Data Portal: https://data.novascotia.ca/
- The Federated Research Data Repository: https://www.frdr.ca/repo/

Want to see how many thefts of vehicles happened in your neighborhood lately? Explore the crime dataset to find out. You can also view the same dataset as a time-lapse of crime reported in Halifax: http://www.crimeheatmap.ca/

Searching in Open Data Portals

No search for data is complete without exploring the data offerings of open data portals. When looking for local data, search in open data portals available at different levels of governments, at different geographic hierarchies, or search in specialized data portals such as an open research data portal.

The availability of accessible data via any open data portal varies immensely. You might find extremely detailed neighborhood data not available anywhere else on the web, or you might find outdated data repackaged from other existing sources. Always have a look at the documentation or 'metadata' before using any dataset, and be aware that some open data interfaces will be easier to work with than others.

The best place to check for Canadian city/provincial/subject-specific open data portals is through the Open Government initiative (scroll down past the map): https://open.canada.ca/en/maps/open-data-canada

Data Librarian Julie Marcoux
julie.marcoux@dal.ca

Learning to use Open Data Portals

Exercises and Tutorials within my *Data and Statistics* research guide are updated whenever possible. In the *Other Interfaces for Finding Data or Statistics section*, you will find self-teaching exercises for finding data in the Halifax and Nova Scotia open data portals, as well as how to search for data in Google. These learning materials should be easy to use. Don't hesitate to give your data librarian a shout if you have trouble accessing any of the content on the page!

Three Levels of Access to StatCan Data

Statistics Canada assembles data on Canada's population, resources, economy and society. Initiatives to share their data have transitioned from printed catalogues to their public website – adding CANSIM Tables (in 2012) and now PUMFs (in 2018). Although Statistics Canada is making more datasets available to more Canadians, the data you need is not necessarily open and accessible. How do you know? The table below highlights three levels of access: the web, DLI and RDC. Dalhousie University is 1 of 82 DLI member institutions and 1 of 32 universities hosting an RDC. (Links provided are subject to change.)

Data @ Dal	Website statcan.gc.ca	DLI* Data Liberation Initiative	RDC Research Data Centre
Access	Open to all	Requires Dalhousie authentication	Restricted access only
Datasets	• Non-confidential data products • Resources on the web	• Non-confidential data tables & microdata • IP-based or password protected portals	• Confidential microdata • Secured in the data centre (no internet access)
Timeframe	Immediate (but must email for PUMFs)	Immediate (PUMFs) or 1–2 days (other data)	3–6 months (after you submit your proposal**)
Contact	DIY = Do it yourself But if you can't find the data you're looking for, ask us. **ASK US**	DLI Contact: Julie Marcoux Data Librarian DLI Alternate Contact: Sai Chua Statistical Computing & Data Support	Heather Hobson (from Statistics Canada) StatCan Analyst Dr. Casey Warman (from Dalhousie) Academic Director
Recent Changes	CANSIM tables have been rebranded as data tables (with new product IDs) e.g. Table: 32-10-0354-01 (was formerly CANSIM 001-0008)	You may need metadata and documentation: Nesstar and CHASS are web-based portals used to manipulate variables within DLI datasets and download the micro-data, or identify suppressed Masterfile** variables.	New data source agreements, e.g. income data, now comes from the CRA (no longer self-reported in Census 2016). New data linkage programs and administrative datasets, e.g.Census 2006 - DAD hospital data.
New datasets *Note: Data products for the website and RDCs are released ahead of PUMFs*	Cannabis Stats Hub includes statistics on health, justice, economy and prices. Census Program Data Viewer provides interactive data visualization tools. Sustainable Development Goals Data Hub supports a sustainability initiative for the United Nations. The Daily offers useful tables, links and official release dates for StatCan data.	• Canadian Community Health Survey (CCHS) Nutrition 2015 PUMF **Free PUMFs** The new Statistics Canada Open Licence makes PUMFs available to all Canadians. Dal authentication is still required for the use of CIHI DAD, PCCF/PCCF+ and SPSD/M	• Canadian Community Health Survey (CCHS) 2017 Annual (Masterfile) • Canadian Survey on Disability (CSD) 2017 • Labour Force Survey (LFS) 2018 • National Cannabis Survey (NCS) 2018 Wave4 • Aboriginal Peoples Survey (APS) • Longitudinal Immigration Database (IMDB) linked to the Longitudinal Survey of Immigrants to Canada (LSIC) 2015
Definitions*	**B2020** - Beyond 20/20 (a data viewer) **Census** - recording information about the whole country **Non-confidential** - suppression of individual identifiers and sensitive data **Survey** - collecting data from a pre-defined subset of the whole country	**B2020 WDS** - Beyond 20/20 web data server **CHASS** products - are an alternate interface and portal for StatCan data (from University of Toronto) **Microdata** - data collected from individuals **Nesstar** - used to view StatCan survey data, identify variables and download PUMFs **PUMF** - Public Use Microdata File	**CRDCN** - Canadian Research Data Centre Network (a national initiative supported by Statistics Canada, SSHRC, CIHR and CFI) **DAD** - Discharge Abstract Database (patient discharge data from hospitals) **IMDB** - Longitudinal Immigration Database (not the Internet Movie Database!)

* DLI is a program within Statistics Canada. The DLI Online Glossary provides a list of StatCan terms and acronyms.

** Researchers wanting to access confidential microdata must first submit a proposal to be reviewed and approved before access to an RDC is granted.

Events

GIS Service in the Sexton Library
Wednesdays until April 3
1–4 p.m.
(This is a pilot project that started on January 6.)

Launch of the Chris Hadfield Space Photographs Collection
Thursday, April 11
3 p.m.
Killam Library, Room 2600

Geoscience Information Management
Students, this is an opportunity to take an intensive GIS course in the spring semester.
ERTH 3500   May 6 – May 28
ERTH 5600   May 6 – June 12
MON – TUES – WED – THURS

Past Events

March 1–8
ECCE App Challenge

March 2–3
Nova Scotia Open Data Contest

March 21
GIS Talk with Esri Canada
Speakers: Alice Jin and Mike Leahy
Killam Library, Room 2600
& by Video Conference to Truro

March 24, 11:59 p.m.
Esri Canada GIS Scholarship
Application Deadline

RESEARCH BOOTCAMP
for Research & Teaching Assistants and Graduate Students

Research Data Management
Tuesday, May 21
1–2:30 p.m.
Halifax Campus

Excel & Data Day
Tuesday, May 28
9 a.m.–5 p.m.
Truro Campus

Easy Excel
Wednesday, May 29
9 a.m.–11 a.m.
Halifax Campus

Excel Pivot Tables
Monday, June 3
9 a.m.–11 a.m.
Halifax Campus

New Data Holdings at the ARDC
Tuesday, June 4
1–2:30 p.m.
Halifax Campus

ESRI Story Maps
Thursday, June 6
9 a.m.–12 p.m.
Halifax Campus

Excel Expert
Friday, June 7
9 a.m.–12 p.m.
Halifax Campus

Finding Data
Monday, June 10
9–10:30 a.m.
Halifax Campus

Data Cleaning with OpenRefine
Wednesday, June 12
9 a.m.–12 p.m.
Halifax Campus

Introduction to R
Thursday, June 13
9 a.m.–1 p.m.
Truro Campus

RESEARCH BOOTCAMP REGISTRATION STARTS APRIL 10.
DESCRIPTIONS AND LOCATIONS WILL BE AVAILABLE AT:
DAL.CA.LIBGUIDES.COM/RESEARCHBOOTCAMP

Find past issues of *Layers* here

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